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Headquarters U.S. Air Force

Integrity - Service - Excellence

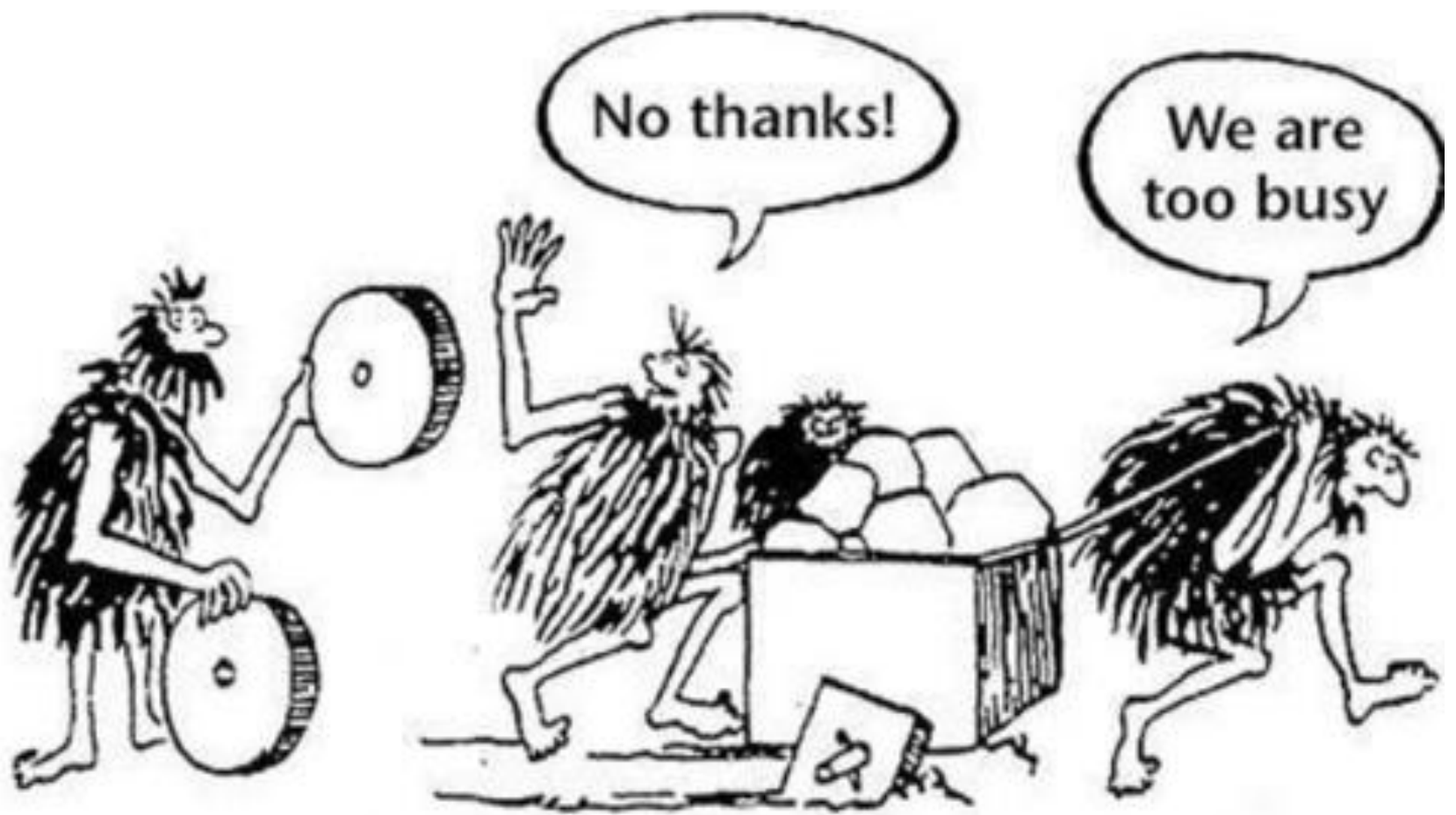
AFCAA CEM Tabular CARD Train the Trainer



U.S. AIR FORCE

May 2016

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Outline

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- Tabular CARD Basics
- Table Features
- Describing Your Program
- Close



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TABULAR CARD BASICS



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CARD Background

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- **A CAPE efficiency initiative is to update guidance for CARDS.**
 - Reduce program office effort through standardized tabular reporting for commodity classes (e.g., ships, aircraft, tracked vehicles, missiles...).
 - Increase value to acquisition community by establishing annual updates to capture changes in program and enhance service cost agency support for service's budget development.
 - Tabular CARD is one of many data capture improvement initiatives

- **Draft Implementation Schedule:**
 - June 1, 2016 – Issue CARD Update Guidance
 - March 1, 2017 – Programs going to a milestone after this date must follow the updated instruction
 - October 1, 2017 –ACAT I programs to submit first annual CARD update using the updated instruction
 - Programs reaching a milestone before March 1, 2017, may submit CARDS using the new instruction in lieu of the current Interim Instruction

- **References**
 - DoDI 5000.73 9June2015
 - Dr. Morin memo 18June2015 including CARD Narrative Outline
 - Formal Instructions: Guidelines for the Preparation and Maintenance of the Cost Analysis Requirements Description, 22Apr2016



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CARD Background (cont'd)

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- **Commodity CARD tables will be made available in Excel workbooks on the CADE website June 1 in conjunction with issuance of CARD Update Guidance for use as a starting point**
 - **Standard commodity work breakdown structure. (Aligns with standard CSDR reporting)**
 - **Parameters and definitions. (Aligns with 1921-T technical data reporting)**
- **The tabular CARD:**
 - **Is consistent with legacy CARD use**
 - **Key technical, programmatic and operational characteristics of an acquisition program used in preparation of cost estimates**
 - **Also enables the future:**
 - **Annual CARD updates**
 - **Database and analytics vision**



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CARD Workbook Overview

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- Commodity CARD tables are presently in Excel workbooks
 - Excel advantage: Readily usable
 - Excel disadvantage: Limited configuration control
 - Future web-based electronic CARD in CADE

Sheet Header

Column Headers

Parameter Name	Value	Definition of Parameter	VocabularyID
Program Name		Defense Cost and Resource Center (DCARC) defined Program Name	DCARCMetadata
Name - Short		DCARC defined, acronym	CEMVocab
Name - Popular		An optional alternative name	CEMVocab
Program Description		DCARC defined program description	CEMVocab
Program Number		Program Number from Defense Acquisition Management Information Retrieval (DAMIR)	DCARCMetadata
Mil-Handbook		MIL-STD-881 Appendix	DCARCMetadata
Weapon System Type		DCARC defined	DCARCMetadata
Lead Service		DCARC defined Service/Component	DCARCMetadata
Other Services		If a program is "Joint", then list other services involved in the program.	DCARCMetadata
Procuring Organization		SysCom	DCARCMetadata
Program Office		Program Executive Office (PEO) or Program Office	DCARCMetadata
Initial Selected Acquisition Review (SAR)		Date from Defense Acquisition Management Information Retrieval (DAMIR)	DCARCMetadata
Latest Selected Acquisition Review (SAR)		Date from DAMIR	DCARCMetadata
Upgrade/Modernization		Yes/No category	CEMVocab
Subprogram Name		Subprogram name if applicable	CEMVocab
Model		Specific configuration or designated model number	CEMVocab

Each sheet (tab) is a table

Common Tables on red tabs
Commodity-specific Tables on green tabs



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Tables in the CARD Workbook

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- **PMP Description (Supports parametric, analogy, and scaling methods)**
 - PMP Hardware Technical Table
 - Software Development Table
- **Quantity (Supports cost improvement curve methods and estimate time-phasing)**
 - Quantities and O&S Time-phased Table
 - Configuration Table
- **Manpower (Supports staff-loading methods)**
 - Manpower Time-Phased Table
- **Common Elements (Supports direct estimating of non-PMP elements)**
 - Nonhardware Technical Table
- **Detailed Information (Supports contract loading, build-up, and BOM methods)**
 - GFE Table
 - Part Level Table
 - LRU Table
- **O&S (Supports O&S methods)**
 - O&S Table
 - Manpower Time-Phased Table
 - Software Maintenance Table
 - Quantities and O&S Time-phased Table
 - PMP Hardware Technical Table
- **General program description, phases, and contracting approach (Provides essential context information)**
 - Program, Milestone, Acquisition, Roles, Budget Plan, WBS/CRS Definitions Tables

Some tables are dual-purposed
and are listed twice



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Tailoring of Content & Detail by Phase & Program Uniqueness

- Each program is different and the tables allow for (and encourage!) tailoring
 - The standard commodity CARD workbooks are a starting point
 - Add rows as needed
- Level of detail in the tables, depends on the maturity of the program
 - Programs at Milestone A or Milestone B are less well-defined than programs at Milestone C or at FRP.
 - In cases where there are gaps or uncertainties in the various program descriptions, these uncertainties will be acknowledged as such in the CARD. This applies to uncertainties in either general program concepts or specific program data. DISCUSS WITH SCA and CAPE ANALYST EARLY TO AVOID UNNECESSARY EFFORT.
 - For uncertainties in program concepts, the CARD should contain assumptions for cost-estimating purposes. DON'T LEAVE IT TO THE COST ESTIMATOR TO DEFINE YOUR PROGRAM.

Work with your Service Cost Agency analyst and your CAPE analyst to expeditiously tailor tabular content to your program



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Unknowns, ^{DRAFT} Uncertainty, NAs, and TBDs

- If a field is considered not applicable to the program, fill cell with “NA” and hide the row
 - Do not delete rows or columns
- If a single value for a parameter is unknown at this time, enter a range of values
- If a range of values is truly unachievable even though applicable, enter “TBD”
 - Use sparingly as TBD entries will receive scrutiny. CARD reviews by the SCA analyst and the CAPE analyst will assess TBDs to determine if a value is needed to conduct estimate. A range of values in lieu of a specific value, may provide more insight.
- Leaving cells blank gives the impression the topic has not yet been addressed and is simply incomplete.

Work with your Service Cost Agency analyst and your CAPE analyst to expeditiously tailor the tables for your program



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Markings and Security

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- Ensure CARD Template has appropriate markings, given that it includes system requirements and technical data
 - FOUO
 - Unclassified(UC)/Classified(C) (SIPRNET)
- Technical Parameters
 - Reference program's Security Classification Guide (SCG) to identify classification of tech parameters before populating template
 - Determine how Classified parameters will be handled
 - Unclassified CARD: suggest " See SCG" for parameters not to be recorded in UC CARD (preclude security breach)
 - Identify tables with contractor design parameters, staffing levels with "Contains Contractor Proprietary Data"
- Adhere to your organization's policies



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TABLE FEATURES



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Parameter Name, Value, and Units

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WBS/CRS Number	WBS/CRS Element	Parameter Name	Value	Unit of Measure	Estimate or Actual	Source	Notes

More columns to the right

Enter the parameter's value

Cite pedigree

Cite specific source for value (e.g. SME name and organization or a specific reference document)

Use Notes column to add any text necessary to amplify anything on this row

- Most CARD tables are have fixed columns prepopulated with rows of parameters organized by commodity WBS
- Each parameter has a name, value, and units
 - Name and units are predefined
- Enter value. Note if value is estimated or actual, cite its source, and enter any necessary text to clarify or amplify the row's contents



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Pre-populated Parameter Columns

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Definition	VocabularyID	Repeatable	List Item #1	List Item #2	List Item #3	List Item #4	List Item #5	List Item #6	List Item #7	List Item #8	List Item #9	List Item #10	List Item #n

- In addition to name and units, each parameter row has many other columns already filled
- Each also has a definition and vocabulary ID
 - Supports nascent configured vocabulary transcending CARD, 1921-T, database search, & connectivity to systems engineering databases, etc.
- Each parameter is further noted by its repeatability (Examples in subsequent chart)
- Each parameter with defined choices (Excel drop-down) has a pre-define list
- If you add new parameters, enter its definition and enter “New” as the Vocabulary ID



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Uncertainty

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+		+			
E	I	K	N	O	
Hit the Ungroup button above to see Uncertainty and Margin		Hit the Ungroup button above to see Objective/Threshold columns.			

- Typically each parameter has a single value
- When showing a range is needed, expand hidden columns to do so
 - This is not intended to be full-blown uncertainty analysis (though you can add that info in the Notes column if desired)
- A given parameter's design margin may be expressed in the designated column
 - Use the same unit of measure – not percent margin
 - A row parameter named “Weight Including Margin” may be used equally well with value in the Value column (if doing so then leave Margin column blank)



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Design Specifications

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+						
E	I	K			O	
Hit the Ungroup button above to see Uncertainty and Margin			Hit the Ungroup button above to see Objective/Threshold columns.			
</						

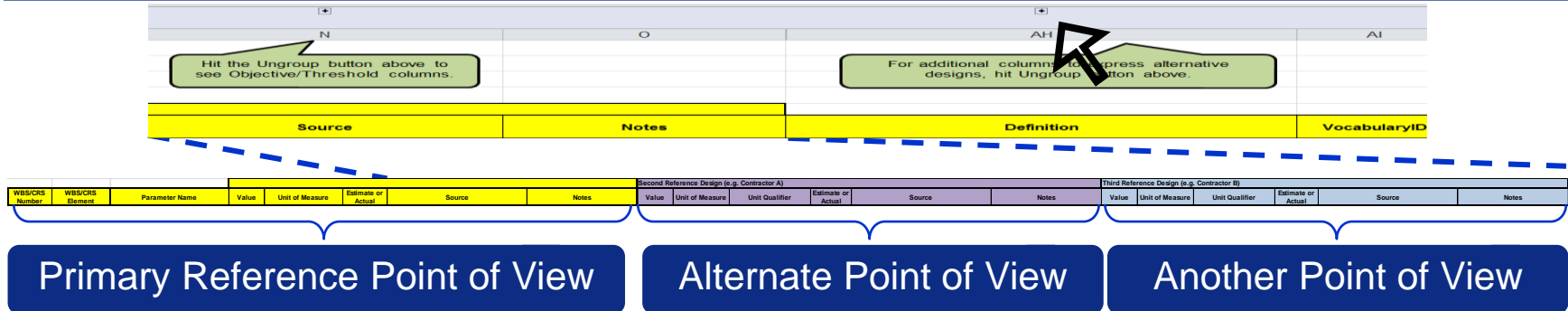
- Typically used only at parent levels
- Each is a single value in the unit of measure noted



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Multiple Points of View

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- Multiple points of view (POV) are accommodated via extra columns when applicable
 - When carrying multiple contractors pre-MS A
 - Program of Record versus an independent review team's expected outcome
- Other ways to express alternate POVs in the tabular CARD
 - Separate tables for each POV in a single workbook
 - Separate workbooks for each design
 - Extensive use of notes column to describe the alternate point of view
 - When alternate POV pertains to only a few parameters: copy and insert paste the row; add parenthetical suffix to the name; and use notes as needed to further explain
 - e.g. "Weight" and "Weight (Red Team Forecast)"



Repeatable Rows

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- Several rows are designated Repeatable with “1...n” or “1...n (Specify)” in their name
- Copy row or groups of rows and insert as many new rows as needed.
- Rename per individual row instructions

Parameter Name			Repeatable
Material Mix 1...n			Y
Manufacturing Process 1...n			Y
Program Office Support 1...n (Specify)			Y
Test Agency 1...n (Specify)			Y
Other Government Agency MIPR 1...n (Specify)			Y
For each Type of Test 1...n			
Test 1			Y
Test Name			Y
Test Type			Y
Facility Location			Y
Test Description			Y



Units Qualifier

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- Use when Name, Value, Unit of Measure is incomplete
 - When a parameter may be repeated and occur on many (consecutive) rows for a single WBS element, the Qualifier distinguishes each row
 - Every time a unit of measure is “Quantity” a Qualifier is expected. The qualifier designates each row’s uniqueness
 - Every time a unit of measure is “List” and the Value is “Other” a Qualifier is expected. The Qualifier illuminates atypical choice selections

Parameter Name	Value	Unit of Measure	Unit Qualifier	List Item 1	List Item 2	List Item 3
Material Mix	50	Percent Weight	Aluminum			
Material Mix	25	Percent Weight	Graphite Epoxy			
Material Mix	10	Percent Weight	Steel			
Number of Targets by Type	8	Quantity	Drones			
Number of Targets by Type	4	Quantity	Barges			
Number of Targets by Type	1	Quantity	Bunkers			
Engine Type	Other	List	Turbofan	Turbojet	Turboprop	Other



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Table Tailorability

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- **For most of the tables, the columns must remain fixed**
 - **Insert rows as needed**
 - **Hide rows and columns not used**
 - **Specific table “tailorability” is discussed with each table’s specific instructions**



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DESCRIBING YOUR PROGRAM IN TABLES



Cost Drivers by WBS Described in Tables

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WBS Number	WBS Element
1.0	Aircraft
1.1	Air Vehicle
1.1.1	Airframe
1.1.1.1	Airframe IAT&Co
1.1.1.2	Fuselage
1.1.1.3	Wing
1.1.1.4	Empennage
1.1.1.5	Nacelle
1.1.1.6	Other Airframe Components (specify)
1.1.2	Engine/Propulsion
1.1.2.1	Propulsion IAT&Co
1.1.2.2	Propulsion Hardware
1.1.2.3	Propulsion Software Release 1..n (Specify)
1.1.2.3.1	Propulsion Software CSCI 1..n (Specify)

1.2	System Engineering
1.2.1	Software Systems Engineering
1.2.2	Integrated Logistics Support
1.2.3	Other Systems Engineering 1...n (Specify)
1.3	Program Management
1.3.1	Software Program Management
1.3.2	Integrated Logistics Support
1.3.3	Other Program Management 1...n (Specify)
1.4	System Test and Evaluation

1.0	Sustainment Effort
1.1	Unit-Level Manpower
1.1.1	Operations Manpower
1.1.2	Unit-Level Maintenance Manpower
1.1.3	Other Unit-Level Manpower
1.2	Unit Operations
1.2.1	Operating Material
1.2.1.1	Energy (Fuel, POL and Electricity)

WBS/CRS Number	WBS/CRS Element	Parameter Name	Value	Unit of Measure	Unit Qualifier	Estimate or Actual	Source	Notes
1.0	Aircraft							
1.1	Air Vehicle							
		Crew Size		Quantity				
		Number of Engines		Quantity				
		Number of Seats		Quantity				
		Engine Type		List				
		Length		Feet				

PMP Technical Table

WBS/CRS Number		1.x.y.1	Release 1					
WBS/CRS Element		WBS/CRS Name		CSCI 1			CSCI n	
Parameter Name	Unit of Measure	Unit Qualifier	Value	Value	Estimated or Actual	Value	Estimated or Actual	
Release Level Context								
Release Begin Date	Date							
Release End Date								
CSCI Level Context								
CSCI Start Date								
CSCI End Date								
Total Software Requirements								
Total External Interface Requirements								
Software Size								
Sizing (SLOC Based)								
Software Language								
Human Generated	SLOC							

Software Development Table

WBS/CRS Number	WBS/CRS Element	Parameter Name	Value	Unit of Measure	Unit Qualifier	Estimate or Actual	Source	Notes
1.2	System Engineering							
		Number of Platforms - Integrated		Quantity	Platforms			
		Number of Platforms - Non-Integrated		Quantity	Platforms			
		Number of Platforms - Shared		Quantity	Platforms			
		Document Name		Text				
		Provide Quantitative Staffing Data:						
		System Engineering Effort		Hours				
		Staffing - Level		FTE				
		Staffing - Profile		List				
		FTE Factor		Hours				

Nonhardware Technical Table

WBS/CRS Number	WBS Element	Parameter Name	Value	Unit of Measure	Unit Qualifier	Estimate or Actual	Source	Notes
1.0	Sustainment Effort / General							
		System Life		Years, Hours, Miles				
		Storage						
		Armament						
		Fuel						
1.2.1.1	Engine							
		Energy Consumption Rate		Gallons, Barrels or Kilowatts				
		Energy Consumption		Gallons, Barrels or Kilowatts				
1.2.1.2	Training Munitions/Expendable Stores							
		For each munition type expended 1..n						
		Number of Training - Weapon Items Expended		Quantity	by Munition Type			

O&S Table



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Describing Your PMP in Tables ***Hardware***

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- The PMP Technical Table is a list of cost drivers organized by WBS

Enter the parameter's value

Cite pedigree

WBS/CRS Number	WBS/CRS Element	Parameter Name	Value	Unit of Measure	Unit Qualifier	Estimate or Actual	Source	Notes
1.0	Aircraft							
1.1	Air Vehicle							
		Crew Size		Quantity				
		Number Of Engines		Quantity				
		Number Of Main Rotors		Quantity				
		Number Of Passengers		Quantity				
		Number Of Tail Rotor Blades		Quantity				
		Engine Type		List				
		Length		Feet				
		Weight - Maximum Takeoff		Pounds				
		Weight - Maximum Landing		Pounds				
		Weight - Wet		Pounds				
		Weight - Dry		Pounds				
		Speed - Maximum		Knots				
		Range - Maximum		Nautical Miles				
1.1.1	Airframe							
		Material Mix 1...n		Percent	Weight by Material Name			
		Weight		Pounds				
		Technology Readiness Level (TRL)		List				
		Manufacturing Readiness Level (MRL)		List				

Cite specific source for value (e.g. SME name and organization or a specific reference document)

Use Notes column to add any text necessary to amplify anything on this row



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Describing Your PMP in Tables Software

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Enter Software
WBS/Release

Enter
CSCI/WBS

WBS/CRS Number	T.x.y.1		Release 1					Release n
WBS/CRS Element	WBS/CRS Name			CSCI 1		CSCI n		
Parameter Name	Unit of Measure	Unit Qualifier	Value	Value	Estimated or Actual	Value	Estimated or Actual	Value
Release Level Context								
Release Begin Date	Date							
Release End Date	Date							
CSCI Level Context								
CSCI Start Date	Date							
CSCI End Date	Date							
Total Software Requirements								
Total External Interface Requirements								
Software Size								
Sizing (SLOC Based)								
Software Language								
Human Generated	SLOC							
Auto Generated	SLOC							
Reuse from External Sources With Modification	SLOC							
Reuse from External Sources Without Modification	SLOC							
Carryover Code With Modification	SLOC							
Carryover Code Without Modification	SLOC							
Government Furnished Code With Modification	SLOC							
Government Furnished Code Without Modification	SLOC							
Deleted Code	SLOC							
Sizing (RICE-FW Object Based)								
Reports	Reports	Low, Medium, High, or Total						
Interfaces	Interfaces	Low, Medium, High, or Total						
Conversions	Conversions	Low, Medium, High, or Total						
Extensions	Extensions	Low, Medium, High, or Total						
Forms	Forms	Low, Medium, High, or Total						
Workflows	Workflows	Low, Medium, High, or Total						
Sizing (Other Basis)								
For each Other Measure 1...n								
Other Measure 1								
Other Measures Name	Description							
Other Measures Count	Quantity							
Other Measures Standards	Description							
Product Description								

Enter Software
WBS/Release
Parameter Values

Repeat
CSCI 1...n

Enter CSCI
Parameter Values

Repeat
Release
1...n

Cite pedigree



Describing Your PMP in Tables

Software without the Software Dev Table

- Typically only for Small Software Projects
 - Separate software cost reporting not expected
 - Software size is one of many non-recurring parameters
- Also could be used for pre-MS B CARDS
 - Though as program matures and software is on contract, migrate to use of the Software Table

WBS/CRS Number	WBS/CRS Element	Parameter Name	Value	Unit of Measure	Unit Qualifier	Estimate or Actual	Source	Notes
1.1.4	Guidance							
...	...							
1.1.4.4	Guidance Software Release 1...n (Specify)							
1.1.4.4.1	Guidance Software Release 1...n CSCI 1...n (Specify)							
	Software Language			Text				
	Product Size - Delivered			SLOC				
	Product Size - Effective			SLOC				
	ESLOC Equation			Text				
	New Code			SLOC				
	Modified Code			SLOC				
	Reused Code			SLOC				
	Carryover Code			SLOC				
	Auto-generated code			SLOC				

Enter parameter values



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Quantity Described in Tables

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WBS Number	WBS Element
1.0	Aircraft
1.1	Air Vehicle
1.1.1	Airframe
1.1.1.1	Airframe IAT&Co
1.1.1.2	Fuselage
1.1.1.3	Wing
1.1.1.4	Empennage
1.1.1.5	Nacelle
1.1.1.6	Other Airframe Components (specify)
1.1.2	Engine/Propulsion
1.1.2.1	Propulsion IAT&Co
1.1.2.2	Propulsion Hardware
1.1.2.3	Propulsion Software Release 1...n (Specify)
1.1.2.3.1	Propulsion Software CSCI 1...n (Specify)

1.2	System Engineering
1.2.1	Software Systems Engineering
1.2.2	Integrated Logistics Support
1.2.3	Other Systems Engineering 1...n (Specify)
1.3	Program Management
1.3.1	Software Program Management
1.3.2	Integrated Logistics Support
1.3.3	Other Program Management 1...n (Specify)
1.4	System Test and Evaluation

1.0	Sustainment Effort
1.1	Unit-Level Manpower
1.1.1	Operations Manpower
1.1.2	Unit-Level Maintenance Manpower
1.1.3	Other Unit-Level Manpower
1.2	Unit Operations
1.2.1	Operating Material
1.2.1.1	Energy (Fuel, POL and Electricity)

Item Name	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	YR n	Long Lead Requirements	Unit of Measure	Unit Qualifier
Designate each column as Estimate or Actual														
Quantity - Procurement														
End Item #1														
End Item #2														
End Item #3														
End Item #4														

Quantities Time-phased Table

Configured end-item quantity by year (parent level)

WBS Number	WBS Element	Lower-level Assembly or Part	Configuration Type 1 (Specify)	Configuration Type 2 (Specify)

Configuration Table

Child level quantity per end-item

Item Name	Constant Per System Value	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	YR n	Unit of Measure
Designate each column as Estimate or Actual →													
Acquisition													
System Program Office													
System Program Office													
Other Government Agency													
Operating and Support													
Organization/Command/Location 1...n (Specify)													

Manpower Time-phased Table

Full Time Equivalents in Acquisition (typically for Government PM office staff)

Operational manpower for O&S



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Quantities and O&S Table

General Instructions

List all program years.
Avoid using Prior and To-complete columns - be explicit

Designate each column as estimate or actual

Item Name	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	YR n ...	Long Lead Requirements	Unit of Measure	Unit Qualifier
Designate each column as Estimate or Actual -->														
Quantity - Procurement														
End Item #1														
End Item #2														
End Item #3														
End Item #4														
...														
Training Item #1														
Training Item #2														
...														
Support Equipment Item #1														
Support Equipment Item #2														
...														

Enter annual quantity

Enter text describing long-lead requirements or any else pertinent to resource spreading

Tailor rows to reflect program's PMP End Items, Training Items, and Support Equipment

Cite quantity units as aircraft, missiles, systems, installations, pods, kits, etc

- Use table to lay out annual quantity of not only PMP End Items but anything usefully described as a series of annual values, e.g., Training and Support Equipment as shown (Note Manpower has its own table)



DRAFT *Configuration Table* *General Instruction*

Configuration Table

Name columns for each configuration.
Insert columns as needed.

Enter quantity per assembly.



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Table-to-Table Quantity Thread

1 of 2

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Configuration Table

WBS Element	Production Representative AUR	Instrumented Round less Warhead	Captive Carry Sensor Suite	AGM-nnn Model C	AGM-nnn Model D
Missile System					
Air Vehicle					
Airframe					
Airframe Common to all Models	1	1		1	1
Airframe Unique to Model C	1	1		1	
Airframe Unique to Model D					1
Propulsion	1	1		1	1
Power and Distribution	1	1		1	1
Guidance	1	1	1	1	1
Navigation	1	1	1	1	1
Controls	1	1		1	1
Communications	1	1	1	1	1
Payload	1			1	1
On Board Test Equipment		1			

Acquisition Quantities Time Phased Table

Item Name	2017	2018	2019	2020	2021	2022
Quantity - Prototype						
Production Representative AUR		120				
Instrumented Roundless Warhead	20					
Captive Carry Sensor Suite	5					
Quantity - Procurement						
AGM-nnn Model C				90	500	500
AGM-nnn Model D						50

- The columns on the Configuration Table should match the rows on the time-phased Quantity Table. (Think: matrix math will provide the total quantity by child element.)



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Table-to-Table Quantity Thread

2 of 2

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Configuration Table

WBS Element	AGM-nnn Model C	AGM-nnn Model D
Missile System		
Air Vehicle		
Airframe		
Airframe Common to all Models	1	1
Airframe Unique to Model C	1	
Airframe Unique to Model D		1
Propulsion	1	1
Power and Distribution	1	1
Guidance	1	1
Navigation	1	1
Controls	1	1
Communications	1	1
Payload	1	1
On Board Test Equipment		

PMP Hardware Technical Table

WBS/CRS Element	Parameter Name	Value	Unit of Measure	Unit Qualifier
Missile System				
Air Vehicle				
Airframe				
Airframe Common to all Models				
Weight			Pounds	Total
Material Mix 1...n			Percent Weight	Material Name
Airframe Unique to Model C				
Weight			Pounds	Total
Material Mix 1...n			Percent Weight	Material Name
Wing Chord			Inches	
Oswald Efficiency Factor			Dimensionless	
Zero Lift Drag Coefficient			Dimensionless	
Number of Surfaces - Movable			Quantity	Surfaces
Airframe Unique to Model D				
Weight			Pounds	Total
Material Mix 1...n			Percent Weight	Material Name
Wing Chord			Inches	
Oswald Efficiency Factor			Dimensionless	
Zero Lift Drag Coefficient			Dimensionless	
Number of Surfaces - Movable			Quantity	Surfaces

- Think ahead also to the WBS and how the cost, quantity, and technical data will tie together



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Manpower Time-Phased Table

General Instructions

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List all program years.
Avoid using Prior and To-complete columns - be explicit

Designate each column
as estimate or actual

Item Name	Constant Per System Value	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	YR n ...	Unit of Measure
Designate each column as Estimate or Actual ---->													
Acquisition													
System Program Office (Summary Breakout)													
System Program Office (Expanded Functional Breakout)													
Other Government Agencies													
Operating and Support													
Organization/Command/Location 1...n (Specify)													
Operate													
Maintain													
Support													
Train													
Sustaining/Systems Engineering													
Program Management													

Enter annual quantity

If applicable, express on a per system or per
organization basis. Use Note column to further describe

Tailor rows to reflect organizations and functional breakouts for the
program (Major categories shown here – breakouts on next chart)

Recommend use Full Time
Equivalents (FTE). Use
Notes column to elaborate
on FTE definition

■ Use table to lay out annual headcount

- Acquisition Phase
- O&S Phase
- Table rows for prime contractor staff not provided, but could be added if needed

Detail Described in Tables

U.S. AIR FORCE

- **When program matures to the point when an understanding of removables is complete, describe each on the LRU Table**
- **For COTS-heavy programs or selected COTS-heavy WBS elements provide BOM via the Parts Table**
- **Describe GFE on the GFE Table**

[illegible][illegible][illegible]

LRU Level Table

U.S. AIR FORCE

Removable Unit Name or Number is primary row identifier

Estimated or actual
hours or miles
between failures

Percentage of time that a repairable item
can not be repaired and will have to be
replaced

[illegible]

Four columns to the left are available to tag each LRU to WBS or WUC as may be useful

Specify MTBF unit of measure (e.g. hours or miles)

If a **LORA** has taken place, enter the associated maintenance level (Organizational, Intermediate or Depot) conducting the repair. Else omit.

- Describe removables such as LRUs on this table

Source and Notes Columns
to the right (not shown)



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Part Level Table

U.S. AIR FORCE

Part Number is primary row identifier

WBS/CRS Number	WBS/CRS Element	Part Number	Vendor Name	Description	Developed/NDI/COTS/GOTS	Quantity	Unit of Measure	Warranty Period	Warranty Period Unit of Measure
Two columns to the left are available to tag each part to WBS as may be useful									

Nonrecurring Price	Unit Price	Price Total	Warranty Price	Warranty Unit Price	Estimate or Negotiated	Competitively Sourced (Y/N)	Contract Type	SBIR (Y/N)	Stepladder Low Quantity	Stepladder High Quantity	Stepladder Price
If a priced bill of materials is provided, enter values for these columns.									If tiered (stepladder) pricing is available, repeat this three-column set as needed to convey completely.		

- Priced BOM as needed. Also any part list, e.g.:
 - High-dollar items
 - Anything with a known tiered pricing schedule

Source and Notes Columns to the right (not shown)



DRAFT

GFE Table

U.S. AIR FORCE

Part Number is primary
row identifier ...

... or Part Name

WBS/CRS Number	WBS/CRS Element	Part Number	Vendor Name	Part Name/ Description	Developed/NDI/ COTS/GOTS	Quantity	Unit of Measure	Warranty Period	Warranty Period Unit of Measure	Source	Notes
Two columns to the left are available to tag each item to WBS as may be useful											

- Simply list GFE
- If GFE comes with a warranty, provide that information as well.



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O&S Table

General Instructions

U.S. AIR FORCE

WBS/CRS Number	WBS/CRS Element	Parameter Name	Value	Unit of Measure	Estimate or Actual	Source	Notes

Organized by
WBS

The parameter's name,
value, and units

Cite reference
document as
applicable

Cite reference
document as
applicable

Use Notes column to
add any text necessary
to amplify anything on
this row.

- **Similar to Hardware PMP Technical Table: fixed columns with rows of parameters organized by WBS**
- **While the Acquisition and Manpower Tables had some time-phased O&S information, this table is for remaining static or steady-state parameters**
- **Tailor rows as needed to convey pertinent sustainment cost drivers for your system**
- **Typically only a single O&S Table is needed**



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Program Overview in Tables

U.S. AIR FORCE

- Additional Tables used to provide essential program context

Parameter Name	Value	Definition of Parameter	VocabularyID
Program Name		Defense Cost and Resource Center (DCARC) defined Program Name	DCARCMetadata
Name - Short		DCARC defined acronym	CEM/Vocab
Name - Popular			CEM/Vocab
Program Description			CEM/Vocab
Program Number		(AMIR)	DCARCMetadata
MIL Handbook			DCARCMetadata
Weapon System Type			DCARCMetadata
Lead Service			DCARCMetadata
Other Services		If a program is "joint", then list other services involved in the program.	DCARCMetadata
Procuring Organization		SysCom	DCARCMetadata
Program Office		Program Office (PO) or Program Office	DCARCMetadata

Program Table

Parameter Name	Subprogram	Value	Estimate or Actual	Source	Notes
Material Development					
Completion of Analysis					
Alternative Systems					
Milestone A					
Technology Development & Risk Reduction Contract Award					

Milestones Table

	Phase Level Description	Contractor Name; Agency Name	Contract Number; Subcontract Number; NIPR Number	Award Date; Begin Date	End Date	Option Number	Contract Fee
Material Solution Analysis							
	Enter Phase Level						
	Contracting Strategy						
	Competition Approach						
	Withhold Rate						
	Additional Information						
	Enter Contract Level Context						
	Contract 1...n (Specify)						
	Subcontract 1...n (Specify)						
	Enter Each Government Agency Context						

Acquisition Table

WBS/CRS Number	WBS/CRS Element	Government Role	Prime Contractor	Secondary Subcontractor/Supplier/Third	Tertiary Subcontractor/Supplier/Third	Notes

Roles Table

Item Name	MS 1	MS 2	MS 3	MS 4	MS 5	MS 6	MS 7	MS 8	MS 9	MS 10	MS 11	MS 12	MS 13	MS 14	MS 15	MS 16	MS 17	MS 18	MS 19	MS 20	MS 21	MS 22	MS 23	MS 24	MS 25	MS 26	MS 27	MS 28	MS 29	MS 30	MS 31	MS 32	MS 33	MS 34	MS 35	MS 36	MS 37	MS 38	MS 39	MS 40	MS 41	MS 42	MS 43	MS 44	MS 45	MS 46	MS 47	MS 48	MS 49	MS 50	MS 51	MS 52	MS 53	MS 54	MS 55	MS 56	MS 57	MS 58	MS 59	MS 60	MS 61	MS 62	MS 63	MS 64	MS 65	MS 66	MS 67	MS 68	MS 69	MS 70	MS 71	MS 72	MS 73	MS 74	MS 75	MS 76	MS 77	MS 78	MS 79	MS 80	MS 81	MS 82	MS 83	MS 84	MS 85	MS 86	MS 87	MS 88	MS 89	MS 90	MS 91	MS 92	MS 93	MS 94	MS 95	MS 96	MS 97	MS 98	MS 99	MS 100	MS 101	MS 102	MS 103	MS 104	MS 105	MS 106	MS 107	MS 108	MS 109	MS 110	MS 111	MS 112	MS 113	MS 114	MS 115	MS 116	MS 117	MS 118	MS 119	MS 120	MS 121	MS 122	MS 123	MS 124	MS 125	MS 126	MS 127	MS 128	MS 129	MS 130	MS 131	MS 132	MS 133	MS 134	MS 135	MS 136	MS 137	MS 138	MS 139	MS 140	MS 141	MS 142	MS 143	MS 144	MS 145	MS 146	MS 147	MS 148	MS 149	MS 150	MS 151	MS 152	MS 153	MS 154	MS 155	MS 156	MS 157	MS 158	MS 159	MS 160	MS 161	MS 162	MS 163	MS 164	MS 165	MS 166	MS 167	MS 168	MS 169	MS 170	MS 171	MS 172	MS 173	MS 174	MS 175	MS 176	MS 177	MS 178	MS 179	MS 180	MS 181	MS 182	MS 183	MS 184	MS 185	MS 186	MS 187	MS 188	MS 189	MS 190	MS 191	MS 192	MS 193	MS 194	MS 195	MS 196	MS 197	MS 198	MS 199	MS 200	MS 201	MS 202	MS 203	MS 204	MS 205	MS 206	MS 207	MS 208	MS 209	MS 210	MS 211	MS 212	MS 213	MS 214	MS 215	MS 216	MS 217	MS 218	MS 219	MS 220	MS 221	MS 222	MS 223	MS 224	MS 225	MS 226	MS 227	MS 228	MS 229	MS 230	MS 231	MS 232	MS 233	MS 234	MS 235	MS 236	MS 237	MS 238	MS 239	MS 240	MS 241	MS 242	MS 243	MS 244	MS 245	MS 246	MS 247	MS 248	MS 249	MS 250	MS 251	MS 252	MS 253	MS 254	MS 255	MS 256	MS 257	MS 258	MS 259	MS 260	MS 261	MS 262	MS 263	MS 264	MS 265	MS 266	MS 267	MS 268	MS 269	MS 270	MS 271	MS 272	MS 273	MS 274	MS 275	MS 276	MS 277	MS 278	MS 279	MS 280	MS 281	MS 282	MS 283	MS 284	MS 285	MS 286	MS 287	MS 288	MS 289	MS 290	MS 291	MS 292	MS 293	MS 294	MS 295	MS 296	MS 297	MS 298	MS 299	MS 300	MS 301	MS 302	MS 303	MS 304	MS 305	MS 306	MS 307	MS 308	MS 309	MS 310	MS 311	MS 312	MS 313	MS 314	MS 315	MS 316	MS 317	MS 318	MS 319	MS 320	MS 321	MS 322	MS 323	MS 324	MS 325	MS 326	MS 327	MS 328	MS 329	MS 330	MS 331	MS 332	MS 333	MS 334	MS 335	MS 336	MS 337	MS 338	MS 339	MS 340	MS 341	MS 342	MS 343	MS 344	MS 345	MS 346	MS 347	MS 348	MS 349	MS 350	MS 351	MS 352	MS 353	MS 354	MS 355	MS 356	MS 357	MS 358	MS 359	MS 360	MS 361	MS 362	MS 363	MS 364	MS 365	MS 366	MS 367	MS 368	MS 369	MS 370	MS 371	MS 372	MS 373	MS 374	MS 375	MS 376	MS 377	MS 378	MS 379	MS 380	MS 381	MS 382	MS 383	MS 384	MS 385	MS 386	MS 387	MS 388	MS 389	MS 390	MS 391	MS 392	MS 393	MS 394	MS 395	MS 396	MS 397	MS 398	MS 399	MS 400	MS 401	MS 402	MS 403	MS 404	MS 405	MS 406	MS 407	MS 408	MS 409	MS 410	MS 411	MS 412	MS 413	MS 414	MS 415	MS 416	MS 417	MS 418	MS 419	MS 420	MS 421	MS 422	MS 423	MS 424	MS 425	MS 426	MS 427	MS 428	MS 429	MS 430	MS 431	MS 432	MS 433	MS 434	MS 435	MS 436	MS 437	MS 438	MS 439	MS 440	MS 441	MS 442	MS 443	MS 444	MS 445	MS 446	MS 447	MS 448	MS 449	MS 450	MS 451	MS 452	MS 453	MS 454	MS 455	MS 456	MS 457	MS 458	MS 459	MS 460	MS 461	MS 462	MS 463	MS 464	MS 465	MS 466	MS 467	MS 468	MS 469	MS 470	MS 471	MS 472	MS 473	MS 474	MS 475	MS 476	MS 477	MS 478	MS 479	MS 480	MS 481	MS 482	MS 483	MS 484	MS 485	MS 486	MS 487	MS 488	MS 489	MS 490	MS 491	MS 492	MS 493	MS 494	MS 495	MS 496	MS 497	MS 498	MS 499	MS 500	MS 501	MS 502	MS 503	MS 504	MS 505	MS 506	MS 507	MS 508	MS 509	MS 510	MS 511	MS 512	MS 513	MS 514	MS 515	MS 516	MS 517	MS 518	MS 519	MS 520	MS 521	MS 522	MS 523	MS 524	MS 525	MS 526	MS 527	MS 528	MS 529	MS 530	MS 531	MS 532	MS 533	MS 534	MS 535	MS 536	MS 537	MS 538	MS 539	MS 540	MS 541	MS 542	MS 543	MS 544	MS 545	MS 546	MS 547	MS 548	MS 549	MS 550	MS 551	MS 552	MS 553	MS 554	MS 555	MS 556	MS 557	MS 558	MS 559	MS 560	MS 561	MS 562	MS 563	MS 564	MS 565	MS 566	MS 567	MS 568	MS 569	MS 570	MS 571	MS 572	MS 573	MS 574	MS 575	MS 576	MS 577	MS 578	MS 579	MS 580	MS 581	MS 582	MS 583	MS 584	MS 585	MS 586	MS 587	MS 588	MS 589	MS 590	MS 591	MS 592	MS 593	MS 594	MS 595	MS 596	MS 597	MS 598	MS 599	MS 600	MS 601	MS 602	MS 603	MS 604	MS 605	MS 606	MS 607	MS 608	MS 609	MS 610	MS 611	MS 612	MS 613	MS 614	MS 615	MS 616	MS 617	MS 618	MS 619	MS 620	MS 621	MS 622	MS 623	MS 624	MS 625	MS 626	MS 627	MS 628	MS 629	MS 630	MS 631	MS 632	MS 633	MS 634	MS 635	MS 636	MS 637	MS 638	MS 639	MS 640	MS 641	MS 642	MS 643	MS 644	MS 645	MS 646	MS 647	MS 648	MS 649	MS 650	MS 651	MS 652	MS 653	MS 654	MS 655	MS 656	MS 657	MS 658	MS 659	MS 660	MS 661	MS 662	MS 663	MS 664	MS 665	MS 666	MS 667	MS 668	MS 669	MS 670	MS 671	MS 672	MS 673	MS 674	MS 675	MS 676	MS 677	MS 678	MS 679	MS 680	MS 681	MS 682	MS 683	MS 684	MS 685	MS 686	MS 687	MS 688	MS 689	MS 690	MS 691	MS 692	MS 693	MS 694	MS 695	MS 696	MS 697	MS 698	MS 699	MS 700	MS 701	MS 702	MS 703	MS 704	MS 705	MS 706	MS 707	MS 708	MS 709	MS 710	MS 711	MS 712	MS 713	MS 714	MS 715	MS 716	MS 717	MS 718	MS 719	MS 720	MS 721	MS 722	MS 723	MS 724	MS 725	MS 726	MS 727	MS 728	MS 729	MS 730	MS 731	MS 732	MS 733	MS 734	MS 735	MS 736	MS 737	MS 738	MS 739	MS 740	MS 741	MS 742	MS 743	MS 744	MS 745	MS 746	MS 747	MS 748	MS 749	MS 750	MS 751	MS 752	MS 753	MS 754	MS 755	MS 756	MS 757	MS 758	MS 759	MS 760	MS 761	MS 762	MS 763	MS 764	MS 765	MS 766	MS 767	MS 768	MS 769	MS 770	MS 771	MS 772	MS 773	MS 774	MS 775	MS 776	MS 777	MS 778	MS 779	MS 780	MS 781	MS 782	MS 783	MS 784	MS 785	MS 786	MS 787	MS 788	MS 789	MS 790	MS 791	MS 792	MS 793	MS 794	MS 795	MS 796	MS 797	MS 798	MS 799	MS 800	MS 801	MS 802	MS 803	MS 804	MS 805	MS 806	MS 807	MS 808	MS 809	MS 810	MS 811	MS 812	MS 813	MS 814	MS 815	MS 816	MS 817	MS 818	MS 819	MS 820	MS 821	MS 822	MS 823	MS 824	MS 825	MS 826	MS 827	MS 828	MS 829	MS 830	MS 831	MS 832	MS 833	MS 834	MS 835	MS 836	MS 837	MS 838	MS 839	MS 840	MS 841	MS 842	MS 843	MS 844	MS 845	MS 846	MS 847	MS 848	MS 849	MS 850	MS 851	MS 852	MS 853	MS 854	MS 855	MS 856	MS 857	MS 858	MS 859	MS 860	MS 861	MS 862	MS 863	MS 864	MS 865	MS 866	MS 867	MS 868	MS 869	MS 870	MS 871	MS 872	MS 873	MS 874	MS 875	MS 876	MS 877	MS 878	MS 879	MS 880	MS 881	MS 882	MS 883	MS 884	MS 885	MS 886	MS 887	MS 888	MS 889	MS 890	MS 891	MS 892	MS 893	MS 894	MS 895	MS 896	MS 897	MS 898	MS 899	MS 900	MS 901	MS 902	MS 903	MS 904	MS 905	MS 906	MS 907	MS 908	MS 909	MS 910	MS 911	MS 912	MS 913	MS 914	MS 915	MS 916	MS 917	MS 918	MS 919	MS 920	MS 921	MS 922	MS 923	MS 924	MS 925	MS 926	MS 927	MS 928	MS 929	MS 930	MS 931	MS 932	MS 933	MS 934	MS 935	MS 936	MS 937	MS 938	MS 939	MS 940	MS 941	MS 942	MS 943	MS 944	MS 945	MS 946	MS 947	MS 948	MS 949	MS 950	MS 951	MS 952	MS 953	MS 954	MS 955	MS 956	MS 957	MS 958	MS 959	MS 960	MS 961	MS 962	MS 963	MS 964	MS 965	MS 966	MS 967	MS 968	MS 969	MS 970	MS 971	MS 972	MS 973	MS 974	MS 975	MS 976	MS 977	MS 978	MS 979	MS 980	MS 981	MS 982	MS 983	MS 984	MS 985	MS 986	MS 987	MS 988	MS 989	MS 990	MS 991	MS 992	MS 993	MS 994	MS 995	MS 996	MS 997	MS 998	MS 999	MS 1000	MS 1001	MS 1002	MS 1003	MS 1004	MS 1005	MS 1006	MS 1007	MS 1008	MS 1009	MS 1010	MS 1011	MS 1012	MS 1013	MS 1014	MS 1015	MS 1016	MS 1017	MS 1018	MS 1019	MS 1020	MS 1021	MS 1022	MS 1023	MS 1024	MS 1025	MS 1026	MS 1027	MS 1028	MS 1029	MS 1030	MS 1031	MS 1032	MS 1033	MS 1034	MS 1035	MS 1036	MS 1037	MS 1038	MS 1039	MS 1040	MS 1041	MS 1042	MS 1043	MS 1044	MS 1045	MS 1046	MS 1047	MS 1048	MS 1049	MS 1050	MS 1051	MS 1052	MS 1053	MS 1054	MS 1055	MS 1056	MS 1057	MS 1058	MS 1059	MS 1060	MS 1061	MS 1062	MS 1063	MS 1064	MS 1065	MS 1066	MS 1067	MS 1068	MS 1069	MS 1070	MS 1071	MS 1072	MS 1073	MS 1074	MS 1075	MS 1076	MS 1077	MS 1078	MS 1079	MS 1080	MS 1081	MS 1082	MS 1083	MS 1084	MS 1085	MS 1086	MS 1087	MS 1088	MS 1089	MS 1090	MS 1091	MS 1092	MS 1093	MS 1094	MS 1095	MS 1096	MS 1097	MS 1098	MS 1099	MS 1100	MS 1101	MS 1102	MS 1103	MS 1104	MS 1105	MS 1106	MS 1107	MS 1108	MS 1109	MS 1110	MS 1111	MS 1112	MS 1113	MS 1114	MS 1115	MS 1116	MS 1117	MS 1118	MS 1119	MS 1120	MS 1121	MS 1122	MS 1123	MS 1124	MS 1125	MS 1126	MS 1127	MS 1128	MS 1129	MS 1130	MS 1131	MS 1132	MS 1133	MS 1134	MS 1135	MS 1136	MS 1137	MS 1138	MS 1139	MS 1140	MS 1141	MS 1142	MS 1143	MS 1144	MS 1145	MS 1146	MS 1147	MS 1148	MS 1149	MS 1150	MS 1151	MS 1152	MS 1153	MS 1154	MS 1155	MS 1156	MS 1157	MS 1158	MS 1159	MS 1160	MS 1161	MS 1162	MS 1163	MS 1164	MS 1165	MS 1166	MS 1167	MS 1168	MS 1169	MS 1170	MS 1171	MS 1172	MS 1173	MS 1174	MS 1175	MS 1176	MS 1177	MS 1178	MS 1179	MS 1180	MS 1181	MS 1182	MS 1183	MS 1184	MS 1185	MS 1186	MS 1187	MS 1188	MS 1189	MS 1190	MS 1191	MS 1192	MS 1193	MS 1194	MS 1195	MS 1196	MS 1197	MS 1198	MS 1199	MS 1200	MS 1201	MS 1202	MS 1203	MS 1204	MS 1205	MS 1206	MS 1207	MS 1208	MS 1209	MS 1210	MS 1211	MS 1212	MS 1213	MS 1214	MS 1215	MS 1216	MS 1217	MS 1218	MS 1219	MS 1220	MS 1221	MS 1222	MS 1223	MS 1224	MS 1225	MS 1
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Program Table

General Instructions

Enter values

Parameter Name	Value	Definition of Parameter	VocabularyID
Program Name		Defense Cost and Resource Center (DCARC) defined Program Name	DCARCMetadata
Name - Short		DCARC defined, acronym	CEMVocab
Name - Popular		An optional alternative name	CEMVocab
Program Description		DCARC defined program description	CEMVocab
Program Number		Program Number from Defense Acquisition Management Information Retrieval (DAMIR)	DCARCMetadata
Mil-Handbook		Mil-STD-881 Appendix	DCARCMetadata
Weapon System Type		DCARC defined	DCARCMetadata
Lead Service		DCARC defined Service/Component	DCARCMetadata
Other Services		If a program is "Joint", then list other services involved in the program.	DCARCMetadata
Procuring Organization		SysCom	DCARCMetadata
Program Office		Program Executive Office (PEO) or Program Office	DCARCMetadata
Initial Selected Acquisition Report (SAR)		Date from Defense Acquisition Management Information Retrieval (DAMIR)	DCARCMetadata
Latest Selected Acquisition Review (SAR)		Date from DAMIR	DCARCMetadata
Upgrade/Modernization		Yes/No category	CEMVocab
Subprogram Name		Subprogram name if applicable	CEMVocab
Model		Specific configuration or designated model number	CEMVocab

Unlikely to need to tailor except perhaps insert additional rows for Subprogram and Model.

- Program Table is a single sheet
- Typically no need to have multiple sheets
- Expand Subprogram and Model rows as needed



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Milestone Table

General Instructions

Enter values
as month, date, and year

Cite source of value
IMS, TEMP, etc.

Parameter Name	Subprogram	Value	Estimate or Actual	Source	Notes
Material Development Decision					
Completion of Analysis of Alternatives (AoA) or Equivalent					
Alternative Systems Review (ASR)					
Milestone A					
Technology Development & Risk Reduction Contract Award					
Capability Development Document-Validation (CDD-V)					
System Requirements Review (SRR)					
System Functional Review (SFR)					
Development RFP Release Decision Point					
Preliminary Design Review (PDR)					
Milestone B					
EMD Contract Award					
Critical Design Review					
Risk Reduction Build					
Development Test & Evaluation Begin					
Delivery of First EMD Unit/First Build					

Tailor as required
to add rows, hide rows,
capture subprogram

Show by subprogram
if needed

Designate each Date as
Estimated or Actual



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Acquisition Table

General Instructions (cont'd)

	Phase Level Description	Contractor Name; Agency Name	Contract Number; Subcontract Number; MIPR Number	Award Date; Begin Date	End Date	Option Number	Contract Fee
Material Solution Analysis							
	<i>Enter Phase Level Context:</i>						
	Contracting Strategy						
	Competition Approach						
	Withhold Rate						
	Additional Information						
	<i>Enter Contract Level Context:</i>						
	Contract 1...n (Specify)						
	Subcontract 1...n (Specify)						
	<i>Enter Each Government Agency Context:</i>						
	Program Office Support 1...n (Specify)						
	Test Agency 1...n (Specify)						
	Other Government Agency MIPR 1...n (Specify)						

Describe characteristics of each contract within each phase

Specify each contract and agency participant in this column. Copy and insert/paste rows as needed.

Describe characteristics of each agency participant within each phase

- Criteria for listing subcontracts varies. Consider:
 - Level of anticipated estimating methods, contract loading, time-phasing, etc.
 - CSDR reporting thresholds: Over \$50M (Optional between \$20M and \$50M)



Roles Table

General Instruction

Enter additional clarifying text as needed e.g. contracting relationship



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Budget Plan Table

General Instructions

Enter Fiscal Years.
Avoid Prior and To-Complete.
Insert columns as needed

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CARD Tables

Budget Plan CARD Table

Enter annual costs (planned budget)

List all program years. Avoid using Prior and To-complete columns - be explicit.

Item Name	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	YR n ...
Air Force 3600											
0603800F											
Prime Contractor(s) Hardware and Software											
Advisory and Assistance Services (A&AS)											
Program Management Administration											
Direct Mission Support											
Federally Funded Research and Development Center (FFRDC)											
Program Management Administration											
Direct Mission Support											
Other Non-PMP Contractors											
Program Management Administration											
Direct Mission Support											
Other Government Costs											

Enter each Appropriation in bold.
Enter each PE Code and indent underneath each appropriation.
Enter category breakout and indent underneath PE Code.
(Use Excel's Indent function - do not enter leading spaces in the cell)

Enter values

Enter each Appropriation and PE Code.
Add categories as underneath each.
Insert rows as needed

Cite source.
POM, PB, etc

Unit of Measure	Source	Notes
Thousands of TY Dollars		
Thousands of TY Dollars		
Thousands of TY Dollars		
Thousands of TY Dollars		
Thousands of TY Dollars		
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Thousands of TY Dollars		
Thousands of TY Dollars		
Thousands of TY Dollars		



- **Enter complete program Work Breakdown Structure and Dictionary**

WBS/CRS DEFINITIONS

[illegible]



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Repeating Tables in a CARD ***Workbook***

- Tables (workbook sheets) may be replicated as needed to describe the program or simply for convenient organization

- The PMP Technical can be split into WBS segments

PMP Technical-Aircraft

PMP Technical-Engine

PMP Technical-Avionics

- Or separate models

PMP Technical-AGM-999A

PMP Technical-AGM-999B

- The Nonhardware Technical can be slit by phase (or contract, or lot)

Nonhardware-TMRR

Nonhardware-EMD

Nonhardware-LRIP

- The Software Development Table must be repeated for each WBS element

Software Dev-Avionics

Software Dev-Weapons

Software Dev-Training



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Closing Slide

- **For additional details, contact ...**



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